

The State of Maine's Beaches

Summer 2005

Sandy beaches represent less than one percent of Maine's 5,300-mile coastline, but they are vitally important—providing significant tourism revenues, wildlife habitat, and buffering from storms.

While most people visit the beach purely for recreation, a growing number of dedicated volunteers and professionals are working to protect the health of Maine's beaches—monitoring marine debris, water quality, wildlife and erosion. This flyer describes some of the work underway; to learn more, plan on attending the State of Maine Beaches conference on August 17th (see back page for details).

Coastal Cleanups

Maine's Coastal Cleanup, held each fall, is the state's largest single volunteer event—engaging more than 2,000 citizens each year in coastal stewardship—collecting tons of shoreline trash. School classes, scout troops, neighborhood groups, civic associations and other interested citizens scour sections of shoreline, picking up debris and documenting the types and amounts found. Participation in the cleanup often sparks an enduring interest in coastal stewardship, inspiring people to engage in ongoing, local efforts to protect their shores.

The Coastal Cleanup reporting forms are tabulated each year—providing detailed data on the kinds of debris found. In 2003, 2,886 volunteers combed over 94 miles of shoreline, collecting 77,349 items that totaled 25,178 pounds. Cigarettes, food wrappers and rope accounted for more than half of all the items they collected. The predominant items (see chart at right) have remained fairly consistent since Maine's first coastal cleanup in 1986.

The debris that litters Maine's shores is more than an aesthetic blight; wildlife can ingest small plastic items or become entangled in fishing line, rope or other debris. Cleanup volunteers in 2003 found six birds, one fish and three mammals entangled in debris.

The 2005 Coastal Cleanup will be held in conjunction with Maine's annual Coastweek celebration, which runs from September 17-24. Individuals and groups interested in organizing a cleanup, or joining a scheduled cleanup, can register online at www.maineoceanprogram.org. For more information on the coastal cleanup, visit the preceding web link or contact Lorraine Lessard at 207-287-1486.

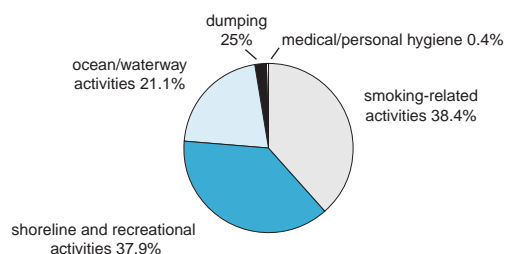


US Fish & Wildlife Service

Marine debris blights Maine's shores and endangers its wildlife.



**Sources of Debris
Maine Coastal Cleanup 2003**





Beach Water Quality

www.mainehealthybeaches.org

Water quality at beaches can be diminished by a range of potential pollutants—from stormwater runoff, sewer overflows and illegal boat discharges to the presence of dogs, wildlife or even people. Maine Healthy Beaches is a voluntary program that helps dozens of communities monitor beaches, notify the public of beach closures, and educate beach-goers about how to avoid water-related illnesses. First established in 2002 (with funding from the US Environmental Protection Agency), the program now has 18 towns monitoring water quality at 37 beaches. Local volunteers (or town staff) use a standard protocol for sampling and post signs notifying the public of water conditions.

“This program involves local community members in assessing water quality, educating community members, and taking remedial actions,” explains Esperanza Stancioff, a University of Maine Cooperative Extension/Sea Grant marine educator who coordinates the Healthy Beaches Program. “Local partners help to design, implement and evaluate the program at the sites they select.” For more information, contact Todd Janeski (todd.janeski@maine.gov; 207-287-1482) or Esperanza Stancioff (esp@umext.maine.edu; 1-800-244-2104).

Practice Healthy Beach Etiquette

Keeping Maine’s beaches clean and its swimming waters healthy is a cooperative effort. Please help prevent water-related illnesses by following these practices:

- Avoid swallowing beach-water.
- Take your children to the bathroom often and wash hands well afterward.
- Change diapers away from the water’s edge and seal them in a plastic bag before disposal.
- Don’t swim if you have diarrhea or feel like you may vomit.
- Do not feed birds or wildlife on the beach. Dispose of refuse properly so that it doesn’t attract animals.
- If you bring a pet onto the beach, dispose of its waste in sealed plastic bags.
- Share this knowledge-many people are not aware that beach health risks exist!

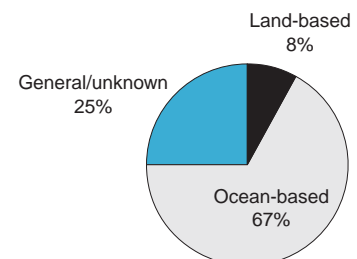
Study Sites in Maine Contribute to National Research on Marine Debris

Since 2002, volunteers in Maine have monitored Maine shorelines monthly (at Jasper Beach in Machiasport, Pemaquid Beach in Bristol, and the Wells National Estuarine Research Reserve) as part of five-year study to assess levels and sources of marine debris. “This study will reveal more patterns over time than the annual coastal cleanup,” says Charlie Barr, National Monitoring Programs Manager at The Ocean Conservancy, the nonprofit organization that is coordinating the study.

Debris is divided according to how it entered the marine environment: from the ocean, from the land or of unknown origin. At all three Maine sites, the most common types of debris—rope, nets, traps, bait bags and work gloves—can be attributed to commercial fishing and other activities at sea. “Prevention efforts in Maine should focus initially on those sources,” Barr suggests. Other regions report debris coming primarily from creeks, rivers and storm drains—with 60 to 80 percent of debris from activities on land.

While the final findings of this national study won’t be analyzed fully until 2007, results generated to date are posted at www.oceanconservancy.org/nmdmp. Click on region 1 of the U.S. map to see results from Maine’s study sites.

**Sources of Debris
Pemaquid Beach, Maine
1996-2005**





Kristen Whiting-Grant

Volunteers Measure Beach Erosion in Southern Maine

Because Maine's beaches are desirable places to live and visit for humans, birds and other wildlife, heated conflicts often arise over how best to manage these settings. A monitoring program launched in 1999 has helped lessen these historic tensions by bringing together community members, scientists and regulators to better understand the complex processes of beach erosion. With support from Maine Sea Grant, the Maine Geological Survey, the University of Maine, and the Maine Coastal Program, community volunteers use a simple surveying technique called profiling to measure monthly changes in the distribution of sand. In 2004, more than 150 volunteers profiled 15 large beaches between South Portland and York. This year, they began recording data on-line, making it easier to view the information.

"While it's too early to speak about trends, our findings to date suggest that moderately and highly developed beaches experience more change overall, while undeveloped "natural" beaches appear more stable," says Kristen Whiting-Grant, a Sea Grant Marine Extension Associate who coordinates the volunteer beach monitoring program. Over time, profiling data will help to reveal net losses or gains in sand, impacts of major storms, and how seawalls and other structures affect beaches. It may even help gauge the impact of rising sea levels. "Data gathered by volunteers are already proving useful for beach planning and management," says Whiting-Grant. The Maine Geological Survey is using the findings to create the State's first beach nourishment policy, and profiling results helped craft a management plan for piping plover habitat in Ogunquit."

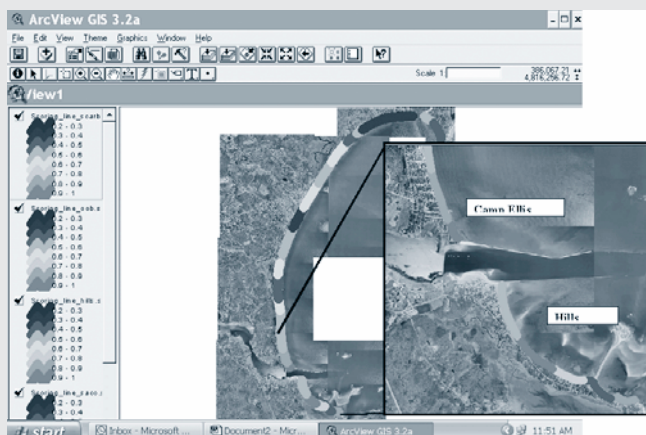
Scoring Maine Beaches

"The State of Maine beach profiling project provides an excellent 'micro' view of beach dynamics at specific locations," notes geologist Peter Slovinsky of the Maine Geological Survey (MGS). "To complement that volunteer work, we needed a 'macro' coast-wide view to identify stretches of shoreline most vulnerable to erosion and flooding." Topographic data gathered from flights made by the National Oceanic and Atmospheric Administration (NOAA) in 2000 and 2004 provided elevation data for many of Maine's sandy beaches. Using this data set, MGS has developed a scoring system based on the physical characteristics of each beach and its management needs. "We focused first on the longest sandy shoreline in Maine, which stretches roughly 7 miles around Saco Bay," Slovinsky says, "and more recently completed scores for the Wells embayment, Scarborough beaches, and Reid State Park, Popham Beach, and Sewall Beach."

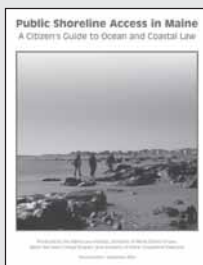
Aerial and on-the-ground data help determine characteristics such as historic rate of shoreline change; shoreline type (*i.e.*, dune, seawall); width of the "dry beach" (from the high-water line to the vegetation line); total beach width (from high water to the first habitable structure) and the difference between maximum elevation and base flood elevations (which reveals areas most susceptible to flooding).

Each characteristic received a score from 1 (excellent) to 4 (poor) along transects placed every 100 feet along the shoreline. The scores for each characteristic were weighted and combined to yield an

overall score for each transect. Transects with similar scores and proximity were grouped, helping to identify 21 stretches of shoreline in greatest need of beach nourishment and/or dune restoration (see figure below). "This scoring system provides a way to depict layers of scientific data visually," Slovinsky notes, "so that coastal planners can see just where to direct management efforts."



This GIS image shows the scores reflecting average management needs in Saco Bay (MEGIS, 2003). The highest management needs (depicted in red) are in Camp Ellis and Hills Beach, which are shown in the magnified image (credit: MGS, using a 2003 aerial image from the Maine Office of GIS).



Reaching the Beach

Public access to Maine's shoreline is a sensitive topic because 93 percent of intertidal areas (between high and low water marks) are privately held—allowing only limited “public trust

rights” for fishing, fowling and navigating. A new educational booklet, cooperatively produced by the Marine Law Institute, University of Maine School of Law, Maine Sea Grant College Program, and the University of Maine Cooperative Extension, gives citizens a detailed understanding of their legal access rights.

Public Shoreline Access in Maine: A Citizen's Guide to Ocean and Coastal Law suggests ways to secure public rights outside the courtroom—including zoning regulations; purchasing access rights; rediscovering historic right-of-ways through legal research; and land trades. For a copy, contact Maine Sea Grant at www.seagrants.umaine.edu, 207-581-1435.

Beach Conference August 17, 2005

The annual Maine Beaches Conference brings together shorefront property owners, volunteer monitors, recreational beach users, municipal and state officials, scientists, environmentalists, and concerned citizens for lively discussions and field sessions covering the current state of Maine's beaches. The 2005 conference will be held on Wednesday, August 17 at York County Community College in Wells. For more information, contact Kristen Whiting-Grant at 207-646-1555 x115 or kristen.whiting-grant@maine.edu.



Maine Coastal Program
State Planning Office
38 State House Station
Augusta, ME 04333-0038
www.maineoceanprogram.org

The Maine Coastal Program represents a partnership of local, regional and state agencies that work collaboratively to enhance management of the state's diverse coastal resources. Housed at the State Planning Office, Coastal Program staff work extensively with governmental agencies and community organizations such as local land trusts and regional economic development groups. Planning and outreach focus on such issues as watershed management, development issues, fisheries management, water quality monitoring, marine education, citizen stewardship, coastal hazards, marine infrastructure and habitat protection.

Sharing the Beach with Endangered Shorebirds

Research, advocacy and education work by Maine Audubon and citizen volunteers has helped federally endangered piping plovers and least terns survive along Maine's beaches. These efforts have increased piping plover numbers from a low of 10 pairs in 1981 to between 47 and 60 pairs in recent years. Work is underway to tally numbers of nesting least terns, but colonies are growing visibly. To learn more, visit <http://www.maineaudubon.org/conservation/atrisk/ppl.html> or contact Maine Audubon's Conservation Department at 207-781-2330, ext. 222.



courtesy Maine Audubon

Managing Maine's Beaches

Much as they love beaches and want to see them protected through time, many Maine residents question the regulations governing activities near the beach. Some individuals see existing regulations as inadequate and want them strengthened, while others insist that homeowners and business owners are over-regulated. Some individuals believe that regulations should be coupled with incentives for private property owners to adopt sound practices; others want the public to invest in sand replenishment on Maine's beaches.

Beginning in July 2004, a group representing major interest groups began meeting regularly to shape a common vision and strategy for beach management in Maine. Topics on their agenda include beach nourishment, land acquisition, rules changes, incentive programs and wildlife habitat management. To learn more, attend the Maine Beaches conference or visit www.maineoceanprogram.org.

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